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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Martin Budaker

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EXAMINER

ADAMS, TASHIANA R

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/562,510	Applicant(s) BUDAKER ET AL.	
	Examiner TASHIANA ADAMS	Art Unit 4136	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 December 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/27/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because of undue length and multiple paragraphs. Correction is required. See MPEP § 608.01(b).
2. The disclosure is objected to because of the following informalities:
 - a. Page 7, Line 19 of the Specification refers to component 4 as both a “axially displaceable element” and a “element”.
 - b. Page 7, Line 16 of the Specification refers to component 16 as both a “sensor surface”, Page 8, Line 6 as a “magnetoresistive sensor” and Page 8, Line 8 as a “sensor”.
 - c. Page 7, Line 18 of the Specification refers to component 18 as both a “axial region” and on Page 9, Line 28 as a “axial extension”
Appropriate correction is required.
3. The disclosure is objected to under 37 CFR 1.71, as being so incomprehensible as to preclude a reasonable search of the prior art by the examiner. For example, the following items are not understood:
 - a. Page 7, Para 2: “a sensor 15 that takes the form of a magnetoresistive sensor or sensor surface16”. Examiner does not understand what is meant by the sensor taking the form of a sensor surface. The drawings seem to show that element 16 is pointing to a surface section of element 15.
 - b. Page 3, Line 34 states that “the frame side component may be a thrust piece” and Claim 20 refers to “a thrust piece” but no where in the spec is

clarification as to what a thrust piece is nor does the drawings show a thrust piece element as considered by the inventor. Examiner notes that Page 3 of the spec states that the thrust piece would be prestressed by spring force or hydraulic pressure but still had no clarification as to the actual form the thrust piece would take.

c. Claim 19 refers to "a member positioned on the shaft" but the specification nor drawings provides any clarification as to what is being referred to as "a member"

Applicant is required to submit an amendment which clarifies the disclosure so that the examiner may make a proper comparison of the invention with the prior art.

Applicant should be careful not to introduce any new matter into the disclosure (i.e., matter which is not supported by the disclosure as originally filed).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. **As best understood, Claims 19-21, 23-24, 26, 28-29, 31, 33, 35, 37-40 are rejected under 35 U.S.C. 102(b) as being anticipated by Schroeder (US Patent 6,400,142).** Schroeder discloses a device for measuring an angular movement in a vehicle steering system(See Figs. 1A) , comprising: a shaft(12) rotationally mounted in a frame; a member(14) positioned on the shaft, the member axially displaceable in a

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direction of the shaft and connected to the shaft by a geared connection(See Fig. 1A) that converts angular movement of the shaft into a longitudinal movement(See Figs. 1A); a longitudinal guide(70) prestressed in a radial direction of the shaft, the member guided in an axial direction by the guide(20), a frame-side component of the guide resting against the member on first oblique surfaces that extend at an angle to each other and in the axial direction of the member(See Fig. 2b), the member and the shaft meshing without backlash by second oblique surfaces of the geared connection, the first oblique surfaces between the frame-side component and the member and the second oblique surfaces of the geared connection having same inclination directions with respect to each other(See Fig. 3); and; a detection device(22) adapted to measure longitudinal movement of the member(See Fig. 1A); **[claim 20]** wherein the member includes a nut(14), the shaft includes a threaded spindle(See Fig. 1A) and the frame side component includes a thrust piece(See Fig. 1A) that radially pressed the onto the threaded spindle(See Fig. 1A)**[claim 21]** wherein the threaded spindle is arranged as a steering spindle(See Fig. 1A and note that the threaded spindle is actually the Steering shaft(12) so therefore it is considered to be the steering spindle**[claim 23]** wherein the frame-side component rests against the member at the first oblique surface(See Fig. 2A) **[claim 24]** wherein the first oblique surfaces are arranged as part of a groove on the member and extends radially toward the shaft(See Fig. 2A and note that the oblique surface would be on the inside of the nut and inherently would consist of grooves that extend radially toward the shaft since the two components are able to engage with one another, also note that the magnetic irregularity(18') can also be considered a groove in

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the member)**[claim 26]** wherein the member is arranged around the shaft in the shape of one of (a) a ring(b) a cylinder and (c) a polygon(Note that our member is in the shape of a nut which generally is in the shape of a polygon(See Fig. 1A), the geared connection including a screw thread between the shaft and the member(See Fig.

1A)**[claim 28]** wherein a main portion of a radial extension of the frame-side component projects into the groove(See Fig. 2A)**[claim 29]** wherein the frame-side component is

prestressed in the radial direction toward the shaft to position the guide and the geared connection in a backlash-free manner(See Fig. 2A)**[claim 31]** wherein the detection

device includes a sensor(30) arranged on the member and a transducer(See Fig. 1A & 1B) in communication with the sensor and arranged on one of (a) the frame and (b) the

frame-side component(See Fig. 1B) **[claim 33]** wherein the sensor includes a

magnetoresistive sensor(22) and the transducer includes one of (a) a bar magnet and

(b) an annular magnet(See Fig. 1A and reference 18)**[claim 35]** wherein the transducer

has a greater axial extension than a structurally predetermined measuring range of the longitudinal movement of member(See Fig. 2A)**[claim 37]** wherein one of (a) several

sensors and (b) several transducers are positioned at least one of (a) over a

circumference and (b) in the longitudinal direction of the member(See Fig. 2A)**[claim**

38] wherein the member(14) is arranged on a steering shaft(12), the detection

device(22) adapted to measure rotation of a steering handle(See Specification Column

3 Lines 49-60 and also note that It has been held that the recitation that an element is

“adapted to” perform a function is not a positive limitation but only requires the ability to

so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*,

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69 USPQ 138. Here the sensor can perform in such a manner and from the description already functions in a similar manner)[**claim 39**] wherein the member(14) is arranged on a shaft(12) arranged as a steering nut(14), the detection device(22) adapted to measure a longitudinal movement of a gear rack(The detection device in the art is capable of such a function and would perform in similar manner as applicants invention)[**claim 40**] a vehicle steering system comprising: a device(See Fig. 1A) adapted to measure an angular movement in the vehicle steering system(It has been held that the recitation that an element is “adapted to” perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138. Here the device can perform in such a manner and as described in the prior art does measure the angular movement in a vehicle steering system), the device including: a shaft(12) rotationally mounted in a frame; a member(14) positioned on the shaft, the member axially displaceable in a direction of the shaft and connected to the shaft by a geared connection(See Fig. 1A) that converts angular movement of the shaft into a longitudinal movement(See Figs. 1A); a longitudinal guide(70) prestressed in a radial direction of the shaft, the member guided in an axial direction by the guide(20), a frame-side component of the guide resting against the member on first oblique surfaces that extend at an angle to each other and in the axial direction of the member(See Fig. 2b), the member and the shaft meshing without backlash by second oblique surfaces of the geared connection, the first oblique surfaces between the frame-side component and the member and the second oblique surfaces of the geared connection having same

inclination directions with respect to each other(See Fig. 3); and; a detection device(22) adapted to measure longitudinal movement of the member(See Fig. 1A)

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **As best understood, Claims 22, 25, 27, 30, 32, 34, 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schroeder (US Patent 6,400,142).**

Schroeder discloses wherein the member includes a threaded nut and the shaft includes a threaded part arranged on a steering nut (See Specification Column 3 Lines 30-33) but does not disclose where it drives a recirculating ball screw of a gear rack. Examiner notes that the applicant himself acknowledges in the specification Para 33 the equivalency of using a sliding-block guide of a recirculating ball screw to allow the device to function in its intended manner. Schroeder discloses the use of a sliding-block guide(16). The substitution of a recirculating ball screw for a sliding-block guide, are all considered to be equivalent elements that are well know and old in the art. At the time of the invention it would have been obvious to one of ordinary skill in this art to substitute one for the other and the substitution would have yielded predictable results.

Regarding claim 25,27, Schroeder discloses the device set forth above, but does not disclose wherein the first oblique surfaces and the second oblique surfaces include trapezoidal inclination direction,[**claim 27**] wherein the screw thread is arranged as a

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trapezoidal thread having tip clearances. Schroeder discloses what appears from Fig. 1A to be triangular inclinational directions based on looking at the matching steering spindle inclinations that would match to the nut inclinations (not shown). It would have been an obvious matter of design choice to use trapezoidal inclinational directions, since such a modification would have involved a mere change in the shape of a component. A change in shape is generally recognized as being within the level of ordinary skill in the art. In this case it would have been obvious to use a trapezoidal inclinational direction if the matching member(in this case nut) had trapezoidal inclinations or if the designer was choosing to use the equivalent element of a recirculating ball screw as discussed above; because it would provide a better fit between the two components. Further, changes in size or shape without special functional significance are not patentable. *Research Corp.v. Nasco Industries, Inc.*, 501 F2d 358; 182 USPQ 449 (CA 7) cert. Denied 184 USPQ 193; 43 USLW 3359 (1974).

Regarding claims 30,32,34,36, Schroeder discloses the device set forth above, and discloses a transducer(42) and a sensor(30) in communication with the transducer, but does not disclose where the transducer is positioned on the member and the sensor arranged on one of (a) the frame and (b) the frame-side component. It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have placed the transducer on the member and the sensor on the frame or frame-side component, since it has been held that rearranging parts of an invention involves only routine skill in the art. (*In re Japikse*, 86 USPQ 70) The motivation for such an arrangement would have been to allow the sensor to stay stationary and permit the

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magnet to move in the axial direction with the member **[claim 32]** wherein the sensor includes a magnetoresistive sensor(22) and the transducer includes one of (a) a bar magnet and (b) an annular magnet(See Fig. 1A and reference 18)**[claim 34]** wherein the transducer has a greater axial extension than a structurally predetermined measuring range of the longitudinal movement of member(See Fig. 2A) **[claim 36]** wherein one of (a) several sensors and (b) several transducers are positioned at least one of (a) over a circumference and (b) in the longitudinal direction of the member(See Fig. 2A)

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TASHIANA ADAMS whose telephone number is (571)270-5228. The examiner can normally be reached on Monday - Thursday 6:30 AM - 5:00 PM (Every Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lesley Morris can be reached on 571-272-6651. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/TASHIANA ADAMS/
Examiner, Art Unit 3611

/Lesley D. Morris/
Supervisory Patent Examiner, Art Unit
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